

Gigabit Ethernet Network Extender

AT-EX1002



Installation Guide

PN 613-50379-00 Rev A



Simply connecting the (IP) world

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Electrical Safety and Emission Statement

Standards: This product meets the following standards.

U.S. Federal Communications Commission

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

This device may not cause harmful interference.

This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Canadian Department of Communications


This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.


RFI Emission

FCC Class B, EN55022 Class B  1




Warning: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.  2

Immunity


EN55024  3


Electrical Safety


UL 1950 (UL/cULus), EN60950 (TUV)  4





Laser


EN60825  5


Important: Appendix B contains translated safety statements for installing this equipment. When you see the , go to Appendix B for the translated safety statement in your language.


Wichtig: Anhang B enthält übersetzte Sicherheitshinweise für die Installation dieses Geräts. Wenn Sie  sehen, schlagen Sie in Anhang B den übersetzten Sicherheitshinweis in Ihrer Sprache nach.


Vigtigt: Tillæg B indeholder oversatte sikkerhedsadvarsler, der vedrører installation af dette udstyr. Når De ser symbolet , skal De slå op i tillæg B og finde de oversatte sikkerhedsadvarsler i Deres eget sprog.


Belangrijk: Appendix B bevat vertaalde veiligheidsopmerkingen voor het installeren van deze apparatuur. Wanneer u de  ziet, raadpleeg Appendix B voor vertaalde veiligheidsinstructies in uw taal.


Important : L'annexe B contient les instructions de sécurité relatives à l'installation de cet équipement. Lorsque vous voyez le symbole , reportez-vous à l'annexe C pour consulter la traduction de ces instructions dans votre langue.

Tärkeää: Liite B sisältää tämän laitteen asentamiseen liittyvät käännettyt turvaohjeet. Kun näet -symbolin, katso käännettyä turvaohjetta liitteestä B.

Importante: l'Appendice B contiene avvisi di sicurezza tradotti per l'installazione di questa apparecchiatura. Il simbolo , indica di consultare l'Appendice B per l'avviso di sicurezza nella propria lingua.

Viktigt: Tillegg B inneholder oversatt sikkerhetsinformasjon for installering av dette utstyret. Når du ser , åpner du til Tillegg B for å finne den oversatte sikkerhetsinformasjonen på ønsket språk.

Importante: O Anexo B contém advertências de segurança traduzidas para instalar este equipamento. Quando vir o símbolo , leia a advertência de segurança traduzida no seu idioma no Anexo B.

Importante: El Apéndice B contiene mensajes de seguridad traducidos para la instalación de este equipo. Cuando vea el símbolo , vaya al Apéndice B para ver el mensaje de seguridad traducido a su idioma.


Obs! Bilaga B innehåller översatta säkerhetsmeddelanden avseende installationen av denna utrustning. När du ser , skall du gå till Bilaga B för att läsa det översatta säkerhetsmeddelandet på ditt språk.

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Preface

This guide contains instructions on how to install the AT-EX1002 Gigabit Ethernet Multimode Extender.

Document Conventions

This document uses the following conventions:

Note

Notes provide additional information.



Warning

Warnings inform you that performing or omitting a specific action may result in bodily injury.



Caution

Cautions inform you that performing or omitting a specific action may result in equipment damage or loss of data.

Where to Find Web-based Guides

The installation and user guides for all Allied Telesyn products are available in Portable Document Format (PDF) from on our web site at www.alliedtelesyn.com. You can view the documents on-line or download them onto a local workstation or server.

Contacting Allied Telesyn

To contact Technical Support by phone, find your country or region in the table below.

United States, Canada, Mexico, Central America, South America Tel: 1 800 428 4835 (option 4)	Germany, Switzerland, Austria, Eastern Europe Tel: (+49) 30-435-900-126
United Kingdom, Denmark, Norway, Sweden, Finland (+44) 1-235-442560	France, Belgium, Luxembourg, The Netherlands, Middle East, Africa (+33) 1-60-92-15-25
Singapore, Taiwan, Thailand, Malaysia, Indonesia, Korea, Philippines, China, India, Hong Kong Tel: (+65) 3815-612	Australia Tel:1 (800) 000-880
Italy, Spain, Portugal, Greece, Turkey, Israel Tel: (+39) 02-41-30-41	Japan Tel: (+81) 3-3443-5640

You can also contact Technical Support on-line at
<http://kb.alliedtelesyn.com>.

Sales or Corporate Information

Allied Telesyn, Inc.
19800 North Creek Parkway,
Suite 200
Bothell, WA 98011
Tel:1 (425) 487-8880
Fax:1 (425) 489-9191

Management Software Updates

New releases of management software for our managed products are available from our web site at www.alliedtelesyn.com and our FTP server at [ftp.alliedtelesyn.com](ftp://ftp.alliedtelesyn.com). To use the FTP server, enter 'anonymous' for the user name when you log in and your e-mail address for the password.

Chapter 1

AT-EX1002 Gigabit Ethernet Multimode Extender

The AT-EX1002 Gigabit Ethernet Multimode Extender extends the distance of your Gigabit Ethernet network up to 2 kilometers (1.25 miles) over multimode fiber optic cable.

The unit features two fiber optic ports, an 1000Base-SX port and an 1000Base-X port. The 1000Base-SX port has a maximum operating distance of 500 meters (1,666 feet) while the 1000Base-X port has a maximum operating distance of 2 kilometers (1.25 miles). Both ports operate in full-duplex mode and use multimode fiber optic cable.

The unit can be used on a table or in an AT-MCR12, AT-TRAY1, or AT-TRAY4 chassis. The device is easy to install and does not require any software configuration or management.

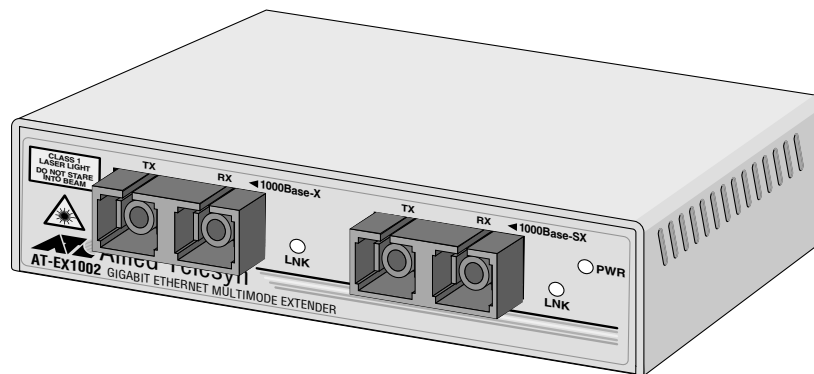


Figure 1 AT-EX1002 Gigabit Ethernet Multimode Extender

Gigabit Ethernet Technology and FDDI Technology

Because of its high-speed and fault-tolerant features, fiber distributed data interface (FDDI) has frequently been used to build backbone networks. However, the growth of new applications that require extremely high rates of throughput, greater than that allowed by FDDI, have emerged and, in many cases, have exceeded the capabilities of FDDI. Examples of high demand network applications include streaming audio and video content.

The solution for many networks is to migrate from FDDI to Gigabit Ethernet, which offers the same resiliency as FDDI but with greater bandwidth capability. However, one of the principal disadvantages to migrating from FDDI to Gigabit Ethernet has been the cost of replacing the legacy multimode fiber optic cabling of the FDDI topology to one designed for Gigabit Ethernet. Currently, Gigabit Ethernet transmission on multimode fiber is limited to a maximum of 550 meters (1830 feet) on 50/125 micron fiber and 275 meters (916 feet) on 62.5/125 micron. In network configurations requiring greater distances, network administrators have been confronted with the choice of either retaining FDDI and its lower bandwidth or replacing the existing multimode fiber cable with single-mode cable, usually at great cost.

The AT-EX1002 Gigabit Ethernet Multimode Extender greatly simplifies the migration by allowing you to install Gigabit Ethernet while maintaining the existing multimode fiber cable. With this unit, you can extend the distance of Gigabit Ethernet transmission over multimode fiber cable from the current limitation of 550 meters (1830 feet) to 2 kilometers (1.24 miles). In many situations, this eliminates the need of replacing the existing multimode fiber cable by allowing you to use the legacy cable system.

Figure 2 illustrates a network that uses two AT-EX1002 Gigabit Multimode Extenders to interconnect two AT-8024GB Fast Ethernet Switches. (Each switch has an 1000Base-SX GBIC module installed in a GBIC expansion slot.)

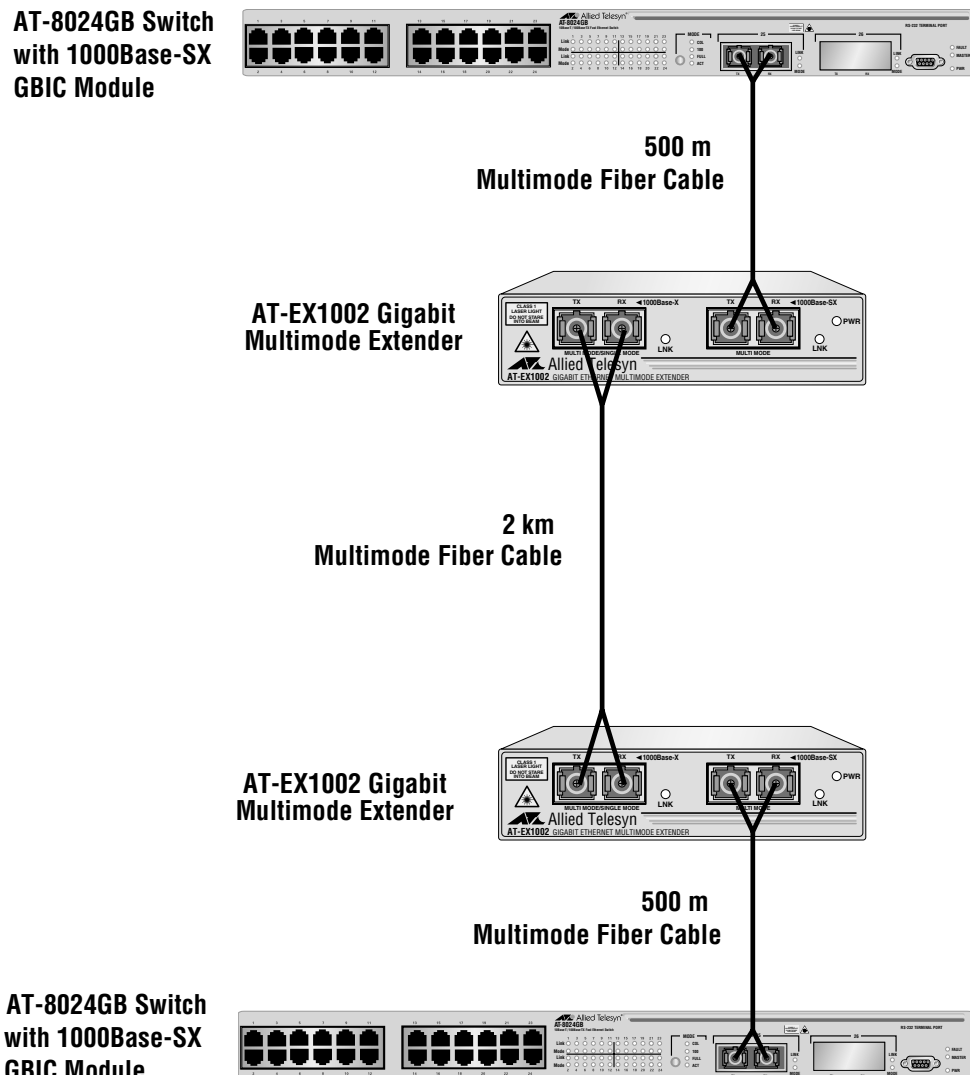


Figure 2 Example Topology

Note

The AT-EX1002 unit must be used in pairs. The 1000Base-X port on the unit must be connected to an 1000Base-X port on another AT-EX1002 unit. You cannot connect the 1000Base-X port to any other network device.

Key Features

The AT-EX1002 unit has the following key features:

- ☐ One 1000Base-X port with a maximum operating distance of 2 kilometers (1.25 miles) using multimode fiber optic cabling
- ☐ One 1000Base-SX port with a maximum operating distance of 500 meters (1,666 feet) using multimode fiber optic cabling
- ☐ Full-duplex operation
- ☐ LEDs for power and port status
- ☐ External AC/DC power adapter
- ☐ Standard, compact size for use on a table or in an AT-MCR12, TRAY1 or TRAY4 chassis

1000Base-X Port

The 1000Base-X fiber optic port has a dual SC connector and uses multimode fiber optic cable. The port has a maximum operating distance of 2 kilometers (1.25 miles) using either 50/125 micron or 62.5/125 micron multimode fiber cable.

Note

This port must be connected to an 1000Base-X port on another AT-EX1002 unit. You cannot connect this port to any other networking device.

1000Base-SX Port

The 1000Base-SX port has an SC connector and uses multimode fiber optic cabling. The port has a maximum distance of 220 meters (730 feet) using 62.5/125 micron multimode fiber optic cable and 500 meters (1,666 feet) using 50/125 micron multimode fiber optic cable. The port operates in full-duplex operation only. The networking device that you connect to this port must operate at 1000 Mbps in full duplex mode.

Status LEDs

Table 1 defines the unit's LEDs.

Table 1 Status LEDs

LED	State	Color	Description
PWR	ON	Green	Power is applied to the unit.
LNK	ON	Green	The port has established a valid link with the end node.

External AC/DC Power Adapter

The media converter comes with an external AC-to-DC power adapter (see Figure 3). The power adapter supplies 12 volts DC to the media converter. Allied Telesyn supplies an approved safety compliant AC power adapter for the 120 and 240 V AC versions with an unregulated output of 12 V DC at 1 A. The power required for the media converter is 12 V DC, 500 mA.

Note

The power adapter is not used if you install the media converter in an AT-MCR12 chassis.

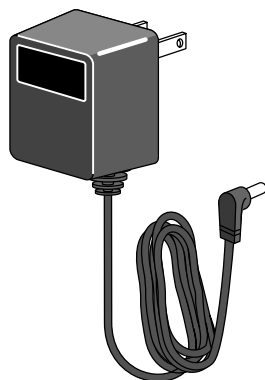


Figure 3 External AC/DC Power Adapter (North American version)

Chapter 2

Installing the AT-EX1002 Unit

This chapter explains how to install an AT-EX1002 device.

Verifying the Package Contents

Make sure the following items are included in your AT-EX1002 package. If any item is missing or damaged, contact your Allied Telesyn sales representative for assistance.

- ☐ One AT-EX1002 Gigabit Ethernet Multimode Extender
- ☐ Four protective feet (for desktop use only)
- ☐ External AC/DC power adapter (North America, Continental Europe, United Kingdom, or Australia)
- ☐ Documentation CD
- ☐ Warranty card

Planning the Installation

Be sure to observe the following guidelines when planning the installation of your AT-EX1002 unit.

- ☐ The 1000Base-X port must be connected to an 1000Base-X port on another AT-EX1002 unit.
- ☐ The end-node connected to the 1000Base-SX port on the AT-EX1002 unit must operate at 1000 Mbps in full-duplex mode.
- ☐ The AT-EX1002 unit can be installed on a desktop or in an AT-MCR12, AT-TRAY1, or AT-TRAY4 chassis. (An AT-MCR12 chassis can support a full complement of 12 AT-EX1002 units.)
- ☐ Refer to Table 1 for the fiber optic cabling specifications.

Table 1 Fiber Optic Cabling Specifications

Port	Cable Type	Maximum Distance
1000Base-X	62.5/12 5µm multimode fiber or 50/12 5µm multimode fiber	2 km (1.25 mi.)
1000Base-SX	62.5/125 µm multimode fiber	220 m (730 ft.)
	50/125 µm multimode fiber	500 m (1,666 ft.)

Selecting a Site

Be sure to observe the following requirements when choosing a site for your AT-EX1002 unit.

- ☐ If you are installing the device on a table, be sure that the table is level and secure.
- ☐ The power outlet for the device should be located near the unit and should be easily accessible.
- ☐ The site should provide for easy access to the ports on the front of the device. This will make it easy for you to connect and disconnect cables, as well as view the switch's LEDs.
- ☐ To allow proper cooling of the device, air flow around the unit should not be restricted.
- ☐ Do not place objects on top of the device.
- ☐ Do not expose the device to moisture or water.
- ☐ Make sure that the site is a dust-free environment.
- ☐ Use dedicated power circuits or power conditioners to supply reliable electrical power to the network devices.

Reviewing Safety Guidelines

Please review the following safety guidelines before you begin to install the device.



Warning

Class 1 laser device. ⚡ 6



Warning

Do not stare into the laser beam. ⚡ 7



Warning

Lightning Danger: Do not work on this equipment or cables during periods of lightning activity. ⚡ 8



Caution

Power cord is used as a disconnection device: To de-energize equipment, disconnect the power cord. ⚡ 9



Caution

Pluggable Equipment: The socket outlet should be installed near the equipment and should be easily accessible. ⚡ 10



Caution

Power to the hub must be sourced only from the adapter. ⚡ 11



Caution

Air vents: The air vents must not be blocked on the unit and must have free access to the room ambient air for cooling. ⚡ 12



Caution

Operating Temperature: This product is designed for a maximum ambient temperature of 40°C. ⚡ 13



Caution

All Countries: Install this product in accordance with local and National Electric Codes. ⚡ 14

Installing the Unit

To install the unit, perform the following procedure:

1. Remove all equipment from the shipping package and store the packaging material in a safe place.

Note

Do not remove the dust covers from the fiber optic ports on the unit until you are ready to connect the fiber optic cables. Dust contamination can adversely impact the operating performance of the ports and the network extender.

2. If you are installing the unit on a desktop, attach the four rubber feet to each corner of the base of the unit. (Do not attach the rubber feet if you are installing the unit in an AT-MCR12, AT-TRAY1, or AT-TRAY4 chassis.)

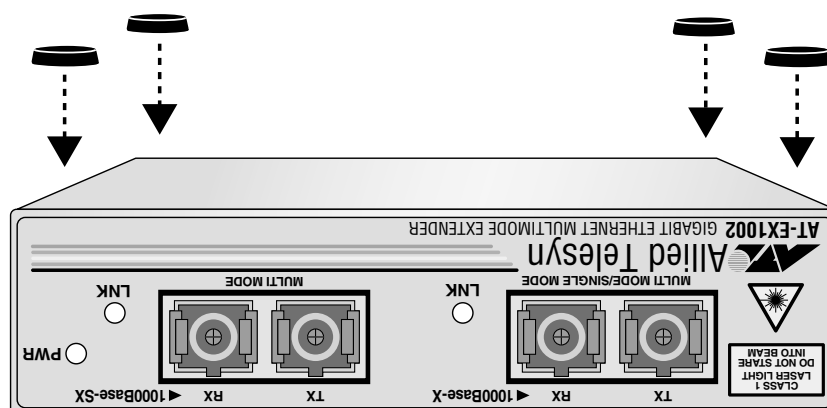


Figure 1 Attaching the Protective Feet

Note

To install the network extender in an AT-MCR12, AT-TRAY1 or TRAY4 chassis, refer to the instructions included with the chassis.

3. Place the media converter on a level, secure surface (such as a desk or table), leaving free space around the unit for ventilation.

4. Plug the AC/DC power adapter into an appropriate AC power outlet and insert the power plug into the DC receptacle located on the back of the unit. Refer to Figure 2 for the DC connector location. (This step does not apply if you installed the unit in an AT-MCR12 chassis.)

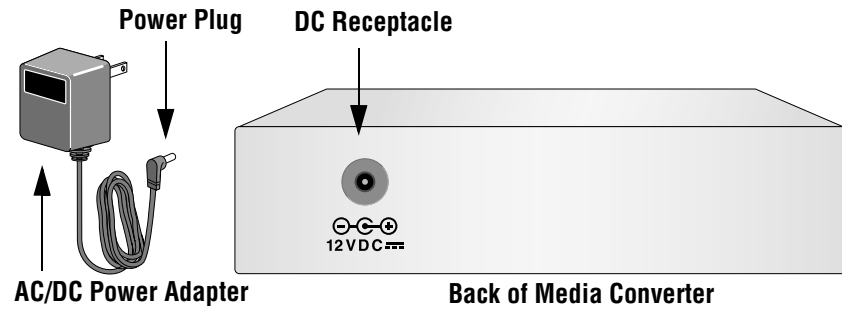


Figure 2 DC Connector

5. Remove the dust covers from the fiber optic ports.

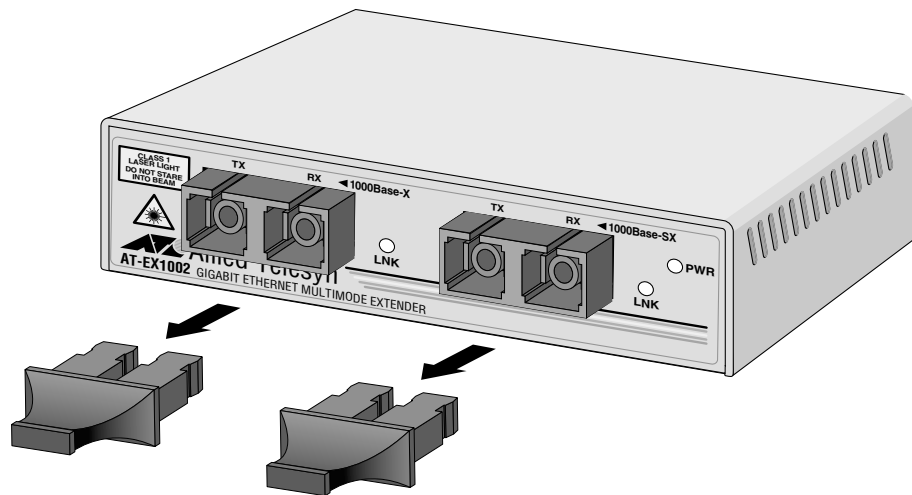


Figure 3 Removing the Dust Covers



Caution

Do not remove the dust covers if you do not intend to connect the fiber optic cables at this time. Dust contamination can adversely impact the operation of the ports.

6. Connect the fiber optic data cables.

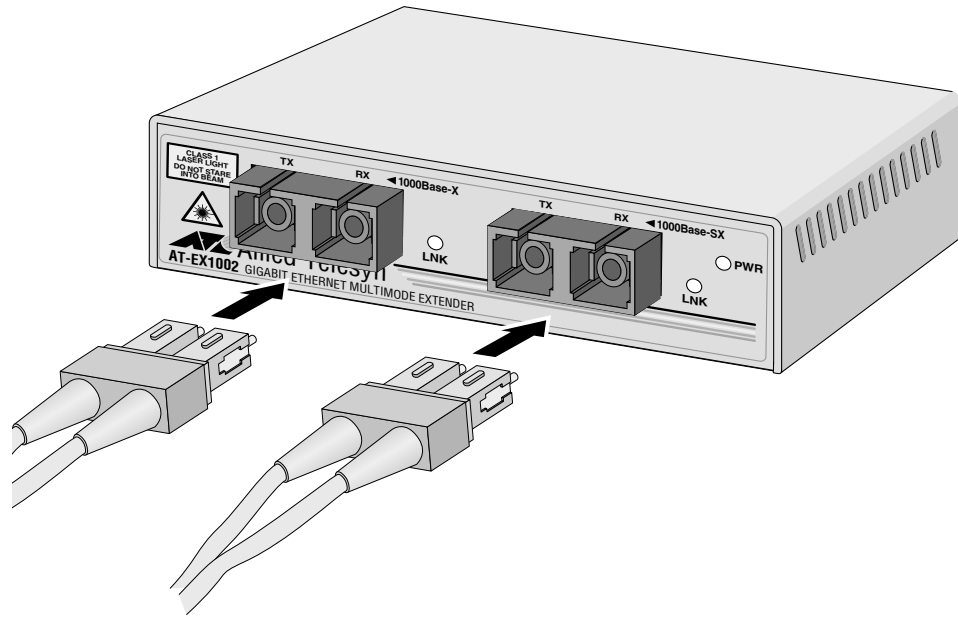


Figure 4 Attaching the Fiber Optic Cables

Observe the following guidelines when attaching a fiber optic cable to the unit:

- ❑ The 1000Base-X port on the unit must be connected to an 1000Base-X port on another AT-EX1002 unit.
- ❑ Be sure that the cable connector is firmly locked into place in the port.
- ❑ A dual SC connector consists of two separate connectors, as shown in Figure 5. Each connects to a separate fiber strand. One is for receiving data and the other is for transmitting data. When connecting a fiber optic cable to a dual SC connector, be sure that the receiver fiber connector is connected to the transmitter connector on the remote end node, and the transmitter fiber connector is connected to the receiver connector on the remote node.

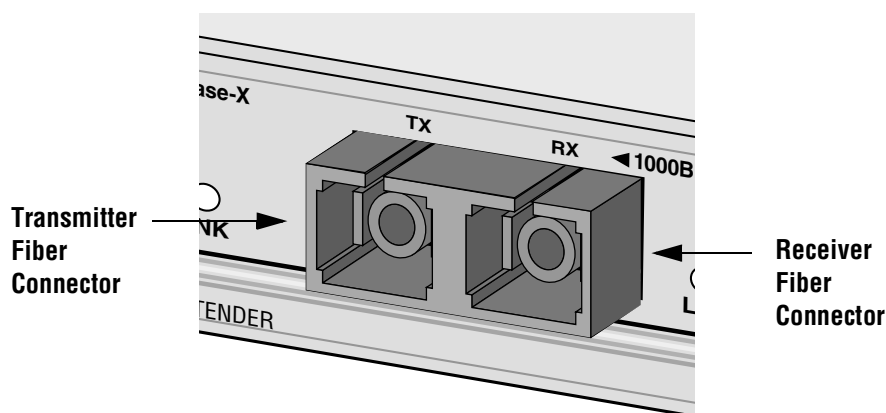


Figure 5 Dual SC Connector

- ❑ You should verify that you are using the appropriate type of fiber optic cabling.
 - ❑ You should verify that the operating specifications of the fiber optic port on the end node is compatible with the 1000Base-SX port on the AT-EX1002 unit. For 1000Base-SX port specifications, refer to Appendix A.
7. Power ON the end-nodes.
 8. Check that the LNK LEDs on both ports of the network extender are green. If the LED is OFF, refer to the next chapter for troubleshooting information.

The AT-EX1002 unit is now ready for use.

Warranty Registration

When you finish installing the product, register the device by completing the enclosed warranty card and sending it in.

Chapter 3

Troubleshooting

Follow the guidelines below to test and troubleshoot the installation in the event a problem occurs.

If the PWR LED is OFF, do the following:

- ☐ Check to be sure that the power adapter is securely connected to a power outlet and that the adapter cable is securely connected to the back of the media converter.
- ☐ If the network extender is installed in an AT-MCR12 chassis, check that the unit is fully seated in the slot.
- ☐ Verify that the power outlet has power by connecting another device to it.
- ☐ Try using another power adapter of the same type that came with your network extender.

If the LNK LED for a fiber optic port is OFF, do the following:

- ☐ Verify that the end-nodes are powered ON and are operating properly.
- ☐ Check that the fiber optic cables are securely connected to the fiber optic ports on the AT-EX1002 unit.
- ☐ Verify that you are using the appropriated type of fiber optic cables and that you have not exceeded the maximum operating distance. For cable types and operating distances, refer to **Planning the Installation** on page 17.

- ❑ A dual SC connector consists of two separate connectors, as shown in Figure 5 on page 23. Each connects to a separate fiber strand. One is for receiving data and the other is for transmitting data. When connecting a fiber optic cable to a dual SC connector, be sure that the receiver fiber connector is connected to the transmitter connector on the remote end node, and the transmitter fiber connector is connected to the receiver connector on the remote node.

If there is a communication problem between the end nodes, do the following:

- ❑ Check to be sure that the end-nodes connected to the AT-EX1002 unit are operating at 1000 Mbps.
- ❑ Make sure that the end nodes connected to the AT-EX1002 unit are operating in full duplex mode.
- ❑ Test the attenuation on the fiber optic cable to ensure that it does not exceed acceptable values.
- ❑ Check that the operating specifications (e.g. wavelength and transmitter output power) of the fiber optic port on the end-nodes are compatible with the operating specifications of the 1000Base-SX port on the AT-EX1002 unit. For the fiber optic port specifications, refer to Appendix A.

If you are still experiencing problems after testing and troubleshooting the installation, contact Allied Telesyn Technical Support for assistance. Refer to the Preface or visit our web site at **www.alliedtelesyn.com** for support information.

Appendix A

Technical Specifications

Physical

Dimensions:	W x D x H 10.5 cm x 9.5 cm x 2.5 cm (4.12 in x 3.75 in x 1.0 in)
Weight:	294 g (10.4 oz)

Environmental

Maximum Operating:	0° C to 40° C (32° F to 104° F)
Maximum Storage:	-20° C to 80° C (-4° F to 176° F)
Relative Operating and Storage Humidity:	5% to 95% (non-condensing)
Operating and Storage Altitude:	Up to 3,048 meters (10,000 feet)

Electrical Rating

Input Supply Voltage:	12 V DC
Maximum Current:	500 mA
Maximum Power Consumption:	6W

Agency Certifications

EMI/RFI:	FCC Class A, EN55022 Class A
Safety:	UL 1950, CSA 950, EN60950, EN60825
Immunity:	EN50082-1 1997 Immunity Standard

Fiber Optic Port Specifications

Table 2 lists the specifications for the 1000Base-X fiber optic port.

Table 1 1000Base-X Fiber Optic Port Specifications

Cable	Wavelength (nm)	Transmitter Output Power (dBm)	Receiver Sensitivity (dBm)
50/125 or 62.5/125 micron multimode	1300	min: -11.5 max: 0.0	min: -24 max: -3.0

Table 2 lists the specifications for the 1000Base-SX fiber optic port.

Table 2 1000Base-SX Fiber Optic Port Specifications

Cable	Wavelength (nm)	Transmitter Output Power (dBm)	Receiver Sensitivity (dBm)
50/125 or 62.5/125 micron multimode	850	min: -9.5 max: -4.0	min: -17.0 max: 0.0

Appendix B

Translated Electrical Safety and Emission Information

Important: This appendix contains multiple-language translations for the safety statements in this guide.

Wichtig: Dieser Anhang enthält Übersetzungen der in diesem Handbuch enthaltenen Sicherheitshinweise in mehreren Sprachen.

Vigtigt: Dette tillæg indeholder oversættelser i flere sprog af sikkerhedsadvarslerne i denne håndbog.

Belangrijk: Deze appendix bevat vertalingen in meerdere talen van de veiligheidsopmerkingen in deze gids.

Important: Cette annexe contient la traduction en plusieurs langues des instructions de sécurité figurant dans ce guide.

Tärkeää: Tämä liite sisältää tässä oppaassa esiintyvät turvaohjeet usealla kielellä.

Importante: questa appendice contiene traduzioni in più lingue degli avvisi di sicurezza di questa guida.

Viktig: Dette tillegget inneholder oversettelser til flere språk av sikkerhetsinformasjonen i denne veiledningen.

Importante: Este anexo contém traduções em vários idiomas das advertências de segurança neste guia.

Importante: Este apéndice contiene traducciones en múltiples idiomas de los mensajes de seguridad incluidos en esta guía.

Obs! Denna bilaga innehåller flerspråkiga översättningar av säkerhetsmeddelandena i denna handledning.

Standards: This product meets the following safety standards.

U.S. Federal Communications Commission

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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
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- Consult the dealer or an experienced radio/TV technician for help.

Canadian Department of Communications




This Class B digital apparatus meets all requirements of the Canadian Interference-Causing Equipment Regulations.

Cet appareil numérique de la classe B respecte toutes les exigences du Règlement sur le matériel brouilleur du Canada.








- | | | |
|------|--|-----------------------------------|
| 🔌 1 | RFI Emission | FCC Class B, EN55022 Class B |
| 🔌 2 |  WARNING: In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures. | |
| 🔌 3 | Immunity | EN55024 |
| 🔌 4 | Electrical Safety | UL 1950 (UL/cULus), EN60950 (TUV) |
| 🔌 5 |  Laser | EN60825 |
| | SAFETY | |
| 🔌 6 |  WARNING: Class 1 Laser product. | |
| 🔌 7 |  WARNING: Do not stare into the laser beam. | |
| 🔌 8 |  LIGHTNING DANGER
DANGER: DO NOT WORK on equipment or CABLES during periods of LIGHTNING ACTIVITY. | |
| 🔌 9 |  CAUTION: POWER CORD IS USED AS A DISCONNECTION DEVICE. TO DE-ENERGIZE EQUIPMENT, disconnect the power cord. | |
| 🔌 10 |  PLUGGABLE EQUIPMENT, the socket outlet shall be installed near the equipment and shall be easily accessible. | |
| 🔌 11 |  Power to the hub must be sourced only from the adapter.
USA/Canada
Use a UL Listed/CSA Certified AC adapter of DC 12V, minimum 500 mA
Europe - EU
Use TÜV licensed AC adapter of DC 12V, minimum 500 mA. | |

UK



















Use a UK Safety Approved AC adapter of DC 12 V, minimum 500 mA.

-  **12 CAUTION:** Air vents must not be blocked and must have free access to the room ambient air for cooling.
-  **13 OPERATING TEMPERATURE:** This product is designed for a maximum ambient temperature of 40° degrees C.
-  **14 ALL COUNTRIES:** Install product in accordance with local and National Electrical Codes.



Normen: Dieses Produkt erfüllt die Anforderungen der nachfolgenden Normen.

- | | | | |
|---|----------|--|-----------------------------------|
|  | 1 | Hochfrequenzstörung | FCC Klasse B, EN55022 Klasse B |
|  | 2 |  WARNUNG: Bei Verwendung zu Hause kann dieses Produkt Funkstörungen hervorrufen. In diesem Fall müßte der Anwender angemessene Gegenmaßnahmen ergreifen. | |
|  | 3 | Störsicherheit | EN55024 |
|  | 4 | Elektrische Sicherheit | UL 1950 (UL/cULus), EN60950 (TUV) |
|  | 5 |  Laser | EN60825 |










SICHERHEIT

-  **6**  **WARNUNG** Laserprodukt der Klasse 1.
-  **7**  **WARNUNG** Nicht direkt in den Strahl blicken.
-  **8**  **GEFAHR DURCH BLITZSCHLAG**
GEFAHR: Keine Arbeiten am Gerät oder an den Kabeln während eines Gewitters ausführen.
-  **9**  **VORSICHT:** DAS NETZKABEL DIENT ZUM TRENNEN DER STROMVERSORGUNG. ZUR TRENNUNG VOM NETZ, KABEL AUS DER STECKDOSE ZIEHEN.
-  **10**  **STECKBARES GERÄT:** Die Anschlußbuchse sollte in der Nähe der Einrichtung angebracht werden und leicht zugänglich sein."
-  **11**  Der Buchse darf nur aus dem Adapter Strom zugeführt werden.
Europe - EU
Gebrauchen Sie einen von TÜV zugelassenen Wechselstromadapter für Gleichstrom 12 V, 500 mA.
-  **12**  **VORSICHT**
Die Entlüftungöffnungen dürfen nicht versperrt sein und müssen zum Kühlen freien Zugang zur Raumluft haben.
-  **13**  **BETRIEBSTEMPERATUR:** Dieses Produkt wurde für den Betrieb in einer Umgebungstemperatur von nicht mehr als 40° C entworfen.
-  **14**  **ALLE LÄNDER:** Installation muß örtlichen und nationalen elektrischen Vorschriften entsprechen.








Standarder: Dette produkt tilfredsstiller de følgende standarder.

- | | | |
|-----|--|-----------------------------------|
| 🔊 1 | Radiofrekvens forstyrrelsesemission | FCC Klasse B, EN55022 Klasse B |
| 🔊 2 |  ADVARSEL: I et hjemligt miljø kunne dette produkt forårsage radio forstyrrelse. Bliver det tilfældet, påkræves brugeren muligvis at tage tilstrækkelige foranstaltninger. | |
| 🔊 3 | Immunitet | EN55024 |
| 🔊 4 | Elektrisk sikkerhed | UL 1950 (UL/cULus), EN60950 (TUV) |
| 🔊 5 |  Laser | EN60825 |



















SIKKERHED

- | | |
|------|---|
| 🔊 6 |  ADVARSEL Laserprodukt av klasse 1. |
| 🔊 7 |  ADVARSEL Stirr ikke på strålen. |
| 🔊 8 |  FARE UNDER UVEJR
FARE: UNDLAD at arbejde på udstyr eller KABLER i perioder med LYNAKTIVITET. |
| 🔊 9 |  ADVARSEL: DEN STRØMFØRENDE LEDNING BRUGES TIL AT AFBRYDE STRØMMEN. SKAL STRØMMEN TIL APPARATET AFBRYDES, tages ledningen ud af stikket. |
| 🔊 10 |  UDSTYR TIL STIKKONTAKT, stikkontakten bør installeres nær ved udstyret og skal være lettilgængelig. |
| 🔊 11 |  Strømforsyningen til apparatet må udelukkende tages fra tilpasningstransformatoren.
Europe - EU
Brug kun TÜV godkendt vekselstrømstransformator på 12 V jævnstrøm, 500 mA. |
| 🔊 12 |  ADVARSEL: Ventilationsåbninger må ikke blokeres og skal have fri adgang til den omgivende luft i rummet for afkøling. |
| 🔊 13 |  BETJENINGSTEMPERATUR: Dette apparat er konstrueret til en omgivende temperatur på maksimum 40 grader C. |
| 🔊 14 |  ALLE LANDE: Installation af produktet skal ske i overensstemmelse med lokal og national lovgivning for elektriske installationer. |



Eisen: Dit product voldoet aan de volgende eisen.

- | | | |
|---|---|-----------------------------------|
|  1 | RFI Emissie | FCC Klasse B, EN55022 Klasse B |
|  2 |  WAARSCHUWING: Binnenshuis kan dit product radiostoring veroorzaken, in welk geval de gebruiker verplicht kan worden om gepaste maatregelen te nemen. | |
|  3 | Immunititeit | EN55024 |
|  4 | Electrische Veiligheid | UL 1950 (UL/cULus), EN60950 (TUV) |
|  5 |  Laser | EN60825 |










VEILIGHEID

- | | |
|--|--|
|  6 |  WAARSCHUWING Klasse-1 laser produkt. |
|  7 |  WAARSCHUWING Neit in de straal staren. |
|  8 |  GEVAAR VOOR BLIKSEMINSLAG
GEVAAR: NIET aan toestellen of KABELS WERKEN bij BLIKSEM. |
|  9 |  WAARSCHUWING: HET TOESTEL WORDT UITGESCHAKELD DOOR DE STROOMKABEL TE ONTKOPPELEN. OM HET TOESTEL STROOMLOOS TE MAKEN: de stroomkabel ontkoppelen. |
|  10 |  AAN TE SLUITEN APPARATUUR, de contactdoos wordt in de nabijheid van de apparatuur geïnstalleerd en is gemakkelijk te bereiken." |
|  11 |  Stroom mag alleen via de adapter naar het apparaat toegevoerd worden.
Europe - EU
Gebruik een door TÜV gekeurde wisselstroomadapter van 12 Volt gelijkstroom, 500 milliampères. |
|  12 |  OPGELET: De ventilatiegaten mogen niet worden gesperd en moeten de omgevingslucht ongehinderd toelaten voor afkoeling. |
|  13 |  BEDRIJFSTEMPERATUUR: De omgevingstemperatuur voor dit produkt mag niet meer bedragen dan 40 graden Celsius. |
|  14 |  ALLE LANDEN: het toestel installeren overeenkomstig de lokale en nationale elektrische voorschriften. |



Normes: ce produit est conforme aux normes de suivantes:

- 🔌 1 Emission d'interférences radioélectriques FCC Classe B, EN55022 Classe B
- 🔌 2  **MISE EN GARDE :** dans un environnement domestique, ce produit peut provoquer des interférences radioélectriques. Auquel cas, l'utilisateur devra prendre les mesures adéquates.
- 🔌 3 Immunité EN55024
- 🔌 4 Sécurité électrique UL 1950 (UL/cULus), EN60950 (TUV)
- 🔌 5  Laser EN60825










SÉCURITÉ

- 🔌 6  **ATTENTION** Produit laser de classe 1.
- 🔌 7  **ATTENTION** Ne pas fixer le faisceau des yeux.
- 🔌 8  **DANGER DE FOUDRE**
DANGER: NE PAS MANIER le matériel ou les CÂBLES lors d'activité orageuse.
- 🔌 9  **ATTENTION:** LE CORDON D'ALIMENTATION SERT DE MISE HORS CIRCUIT. POUR COUPER L'ALIMENTATION DU MATÉRIEL, débrancher le cordon.
- 🔌 10  EQUIPEMENT POUR BRANCHEMENT ELECTRIQUE, la prise de sortie doit être placée près de l'équipement et facilement accessible".
- 🔌 11  L'alimentation du concentrateur doit être uniquement fournie par l'adaptateur.
Europe - EU
Utiliser un adaptateur secteur conforme TÜV de 12 V, 500 mA en courant continu.
- 🔌 12  **ATTENTION:** Ne pas bloquer les fentes d'aération, ceci empêcherait l'air ambiant de circuler librement pour le refroidissement.
- 🔌 13  **TEMPÉRATURE DE FONCTIONNEMENT:** Ce matériel est capable de tolérer une température ambiante maximum de ou 40 degrés Celsius.
- 🔌 14  **POUR TOUS PAYS:** Installer le matériel conformément aux normes électriques nationales et locales.



Standardit: Tämä tuote on seuraavien standardien mukainen.

- 🔊 1 Radioaaltojen häirintä FCC Luokka B, EN55022 Luokka B
- 🔊 2  **VAROITUS:** Kotiolosuhteissa tämä laite voi aiheuttaa radioaaltojen häiröitä, missä tapauksessa laitteen käyttäjän on mahdollisesti ryhdyttävä tarpeellisiin toimenpiteisiin.
- 🔊 3 Kestävyys EN55024
- 🔊 4 Sähköturvallisuus UL 1950 (UL/cULus), EN60950 (TUV)
- 🔊 5  Laser EN60825










TURVALLISUUS

- 🔊 6  **VAROITUS** Luokan 1 Lasertuote.
- 🔊 7  **VAROITUS** Älä katso säteeseen.
- 🔊 8  **SALAMANISKUVAARA**
HENGENVAARA: ÄLÄ TYÖSKENTELE laitteiden tai KAAPELEIDEN KANSSA SALAMOINNIN AIKANA.
- 🔊 9  **HUOMAUTUS:** VIRTajohtoa käytetään VIRRANKATKAISULAITTEENA. VIRTAKATKAISTAAN irrottamalla virtajohto.
- 🔊 10  **PISTORASIAAN KYTKETTÄVÄ LAITE;** pistorasia on asennettava laitteen lähelle ja siihen on oltava esteetön pääsy."
- 🔊 11  Tähtipisteeseen (hub) syötettävän virran pitää tulla ainoastaan sovittimesta.
Europe - EU
Käytä TÜV-lisenssillä valmistettua verkkosovitinta, jonka tasajännitteen nimellisarvot ovat DC 12 V, 500 mA (milliampeeria).
- 🔊 12  **HUOMAUTUS:** Ilmavaihtoreikiä ei pidä tukkia ja niillä täytyy olla vapaa yhteys ympäröivään huoneilmaan, jotta ilmanvaihto tapahtuisi.
- 🔊 13  **KÄYTTÖLÄMPÖTILA:** Tämä tuote on suunniteltu ympäröivän ilman maksimilämpötilalle 40°C.
- 🔊 14  **KAIKKI MAAT:** Asenna tuote paikallisten ja kansallisten sähköturvallisuusmääräysten mukaisesti.



Standard: Questo prodotto è conforme ai seguenti standard.

- 🔌 1 Emissione RFI (interferenza di radiofrequenza) FCC Classe B, EN55022 Classe B
- 🔌 2  **AVVERTENZA:** in ambiente domestico questo prodotto potrebbe causare radio interferenza. In questo caso potrebbe richiedersi all'utente di prendere gli adeguati provvedimenti.
- 🔌 3 Immunità EN55024
- 🔌 4 Sicurezza elettrica UL 1950 (UL/cULus), EN60950 (TUV)
- 🔌 5  Laser EN60825










NORME DI SICUREZZA

- 🔌 6  **AVVERTENZA** Prodotto laser di Classe 1.
- 🔌 7  **AVVERTENZA** Non fissare il raggio con gli occhi.
- 🔌 8  **PERICOLO DI FULMINI**
PERICOLO: NON LAVORARE sul dispositivo o sui CAVI durante PRECIPITAZIONI TEMPORALESCHES.
- 🔌 9  **ATTENZIONE:** IL CAVO DI ALIMENTAZIONE È USATO COME DISPOSITIVO DI DISATTIVAZIONE. PER TOGLIERE LA CORRENTE AL DISPOSITIVO staccare il cavo di alimentazione.
- 🔌 10  APPARECCHIATURA COLLEGABILE, la presa va installata vicino all'apparecchio per risultare facilmente accessibile".
- 🔌 11  Questo dispositivo deve essere alimentato solo mediante l'adattatore.
Europe - EU
Utilizzare l'adattatore per c.a. da 12 V c.c. e 500 mA conforme alla normativa TÜV.
- 🔌 12  **ATTENZIONE:** le prese d'aria non vanno ostruite e devono consentire il libero ricircolo dell'aria ambiente per il raffreddamento.
- 🔌 13  **TEMPERATURA DI FUNZIONAMENTO:** Questo prodotto è concepito per una temperatura ambientale massima di 40 gradi centigradi.
- 🔌 14  **TUTTI I PAESI:** installare il prodotto in conformità delle vigenti normative elettriche nazionali.








Sikkerhetsnormer: Dette produktet tilfredsstiller følgende sikkerhetsnormer.

- | | | |
|---|---|-----------------------------------|
| 1 | RFI stråling | FCC Klasse B, EN55022 Klasse B |
| 2 |  ADVARSEL: Hvis dette produktet benyttes til privat bruk, kan produktet forårsake radioforstyrrelse. Hvis dette skjer, må brukeren ta de nødvendige forholdsregler. | |
| 3 | Immunitet | EN55024 |
| 4 | Elektrisk sikkerhet | UL 1950 (UL/cULus), EN60950 (TUV) |
| 5 |  Laser | EN60825 |



















SIKKERHET

- | | |
|----|---|
| 6 |  ADVARSEL Laserprodukt av klasse 1. |
| 7 |  ADVARSEL Stirr ikke på strålen. |
| 8 |  FARE FOR LYNNEDSLAG
FARE: ARBEID IKKE på utstyr eller KABLER i TORDENVÆR. |
| 9 |  FORSIKTIG: STRØMLEDNINGEN BRUKES TIL Å FRAKOBLE UTSTYRET. FOR Å DEAKTIVISERE UTSTYRET, må strømforsyningen kobles fra. |
| 10 |  UTSTYR FOR STIKKONTAKT. Stikkontakten skal monteres i nærheten av utstyret og skal være lett tilgjengelig." |
| 11 |  All strømtilførsel må komme fra adapteren.
Europe - EU
Benytt TÜV-godkjent AC-adapter på 12V DC, 500mA (milliampere) |
| 12 |  FORSIKTIG: Lufteventilene må ikke blokkeres, og må ha fri tilgang til luft med romtemperatur for avkjøling. |
| 13 |  DRIFTSTEMPERATUR: Dette produktet er konstruert for bruk i maksimum romtemperatur på 40 grader celsius. |
| 14 |  ALLE LAND: Produktet må installeres i samsvar med de lokale og nasjonale elektriske koder. |



Padrões: Este produto atende aos seguintes padrões.

- | | | | |
|---|----------|--|-----------------------------------|
|  | 1 | Emissão de interferência de radiofrequência | FCC Classe B, EN55022 Classe B |
|  | 2 |  AVISO: Num ambiente doméstico este produto pode causar interferência na radiorrecepção e, neste caso, pode ser necessário que o utente tome as medidas adequadas. | |
|  | 3 | Imunidade | EN55024 |
|  | 4 | Segurança Eléctrica | UL 1950 (UL/cULus), EN60950 (TUV) |
|  | 5 |  Laser | EN60825 |










SEGURANÇA

- | | | |
|---|-----------|---|
|  | 6 |  AVISO Produto laser de classe 1 |
|  | 7 |  AVISO Não olhe fixamente para o raio. |
|  | 8 |  PERIGO DE CHOQUE CAUSADO POR RAIOS
PERIGO: NÃO TRABALHE no equipamento ou nos CABOS durante períodos suscetíveis a QUEDAS DE RAIOS. |
|  | 9 |  CUIDADO: O CABO DE ALIMENTAÇÃO É UTILIZADO COMO UM DISPOSITIVO DE DESCONEXÃO. PARA DESELETRIFICAR O EQUIPAMENTO, desconecte o cabo de ALIMENTAÇÃO. |
|  | 10 |  EQUIPAMENTO DE LIGAÇÃO, a tomada eléctrica deve estar instalada perto do equipamento e ser de fácil acesso." |
|  | 11 |  Use somente o adaptador fornecido para alimentação eléctrica do hub.
Europe - EU
Use um adaptador de corrente alternada com saída DC de 12V e 500mA em conformidade com as especificações da TÜV. |
|  | 12 |  CUIDADO: As aberturas de ventilação não devem ser bloqueadas e devem ter acesso livre ao ar ambiente para arrefecimento adequado do aparelho. |
|  | 13 |  TEMPERATURA DE FUNCIONAMENTO: Este produto foi projetado para uma temperatura ambiente máxima de 40 graus centígrados. |
|  | 14 |  TODOS OS PAÍSES: Instale o produto de acordo com as normas nacionais e locais para instalações eléctricas. |



Estándares: Este producto cumple con los siguientes estándares.

- 🔧 1 Emisión RFI FCC Clase B, EN55022 Clase B
- 🔧 2  **ADVERTENCIA:** en un entorno doméstico, este producto puede causar radiointerferencias, en cuyo caso, puede requerirse del usuario que tome las medidas que sean convenientes al respecto.
- 🔧 3 Inmunidad EN55024
- 🔧 4 Seguridad eléctrica UL 1950 (UL/cULus), EN60950 (TUV)
- 🔧 5  Laser EN60825










SEGURIDAD

- 🔧 6  **¡ADVERTENCIA!** Producto láser Clase 1.
- 🔧 7  **¡ADVERTENCIA!** No mirat fijamente el haz.
- 🔧 8  **PELIGRO DE RAYOS**
PELIGRO: NO REALICE NINGUN TIPO DE TRABAJO O CONEXION en los equipos o en LOS CABLES durante TORMENTAS ELECTRICAS.
- 🔧 9  **ATENCION:** EL CABLE DE ALIMENTACION SE USA COMO UN DISPOSITIVO DE DESCONEXION. PARA DESACTIVAR EL EQUIPO, desconecte el cable de alimentación.
- 🔧 10  EQUIPO CONECTABLE, el tomacorriente se debe instalar cerca del equipo, en un lugar con acceso fácil".
- 🔧 11  La energía para el dispositivo central o "hub" debe provenir únicamente del adaptador.
Europe - EU
Utilizar un adaptador de corriente alterna autorizado TÜV de 12 voltios de corriente continua y 500 miliamperios.
- 🔧 12  **ATENCION:** Las aberturas para ventilación no deberán bloquearse y deberán tener acceso libre al aire ambiental de la sala para su enfriamiento.
- 🔧 13  **TEMPERATURA REQUERIDA PARA LA OPERACIÓN:** Este producto está diseñado para una temperatura ambiental máxima de 40 grados C.
- 🔧 14  **PARA TODOS LOS PAÍSES:** Monte el producto de acuerdo con los Códigos Eléctricos locales y nacionales.

Standarder: Denna produkt uppfyller följande standarder.

- | | | |
|-----|---|-----------------------------------|
| 🔌 1 | Radiostörning | FCC Klass B, EN55022 Klass B |
| 🔌 2 |  WARNING: Denna produkt kan ge upphov till radiostörningar i hemmet, vilket kan tvinga användaren till att vidtaga erforderliga åtgärder. | |
| 🔌 3 | Immunitet | EN55024 |
| 🔌 4 | Elsäkerhet | UL 1950 (UL/cULus), EN60950 (TUV) |
| 🔌 5 |  Laser | EN60825 |

SÄKERHET

- | | | |
|------|---|--|
| 🔌 6 |  WARNING! Laserprodukt av klass 1. | |
| 🔌 7 |  WARNING! Laserstrålning när enheten är öppen. | |
| 🔌 8 |  FARA FÖR BLIXTNEDSLAG
FARA: ARBETA EJ på utrustningen eller kablarna vid ÅSKVÄDER. | |
| 🔌 9 |  WARNING: NÄTKABELN ANVÄNDS SOM STRÖMBRYTARE FÖR ATT KOPPLA FRÅN STRÖMMEN, dra ur nätkabeln. | |
| 🔌 10 |  UTRUSTNING MED PLUGG. Uttaget skall installeras i utrustningens närhet och vara lättåtkomligt". | |
| 🔌 11 |  Endast anslutningsenheten får vara kraftkälla till centralen.
Europe - EU
Använd en växelströmsanslutningsenhet licensierad av TÜV. Likström 12V, 500mA. | |
| 🔌 12 |  WARNING: Luftventilerna får ej blockeras och måste ha fri tillgång till omgivande rumsluft för avsvälning. | |
| 🔌 13 |  DRIFTSTEMPERATUR: Denna produkt är konstruerad för rumstemperatur ej överstigande 40 grader Celsius. | |
| 🔌 14 |  ALLA LÄNDER: Installera produkten i enlighet med lokala och statliga bestämmelser för elektrisk utrustning. | |